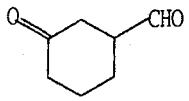
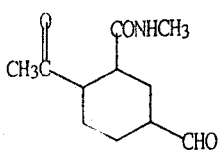
臺北醫學大學 九十 學年度第 一 學期 ~~期中~~ 期末 考試 (命試) 題紙

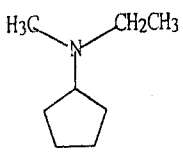
系級	科目	授課教師	考試日期	學號	姓名
藥二	有機化學	李誠	91年1月15日第2節		

※①請注意本試題共 4 張。如發現頁數不足及空白頁或缺印，應當場請求補齊，否則缺少部份概以零分計。
②每張試題卷務必填寫(學號)、(姓名)。

I. Name the following compounds according to IUPAC rules: 9 %

(a) 

(b) 

(c) 

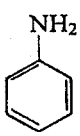
II. Rank the substances in each of the foll groups in order of increasing acidity: 6 %

(a) CH_3CH_2OH, CH_3COCH_3, Cl $H_2COOC_2H_5$, CH_3CH_2COOH

(b) *p*-Nitrobenzoic acid, *p*-[illegible], acetic acid, benzoic acid

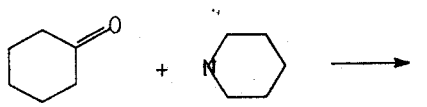
III. Rank the following compounds in order of ascending basicity. 6 %

(a) *p*-Chloroaniline, *p*-aminoacetophenone, *p*-methylaniline

(b) $CH_3CH_2NH_2$, 

, 

IV. Give the major product(s) of the following reactions: 30 %

1) 

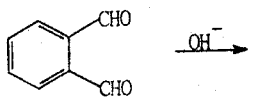
2) 

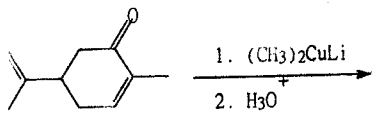
3) 2-Pentanone + 1,3-propanediol $\xrightarrow{H_3O^+}$

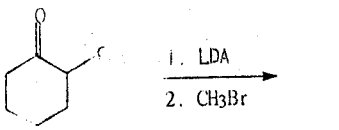
臺北醫學大學 九十 學年度第 一 學期 期~~中~~末 考試 命(試) 題紙

系級	科目	授課教師	考試日期	學號	姓名
學(六)二	有機化學	李誠	91年1月15日第之節		

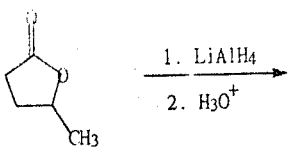
※①請注意本試題共 4 張。如發現頁數不足及空白頁或缺印，應當場請求補齊，否則缺少部份概以零分計。
②每張試題卷務必填寫(學號)、(姓名)。

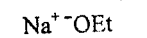
4) 

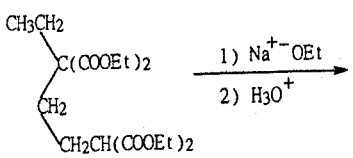
5) 

6) 

7) 

8) 

9) Ethyl phenylacetate 

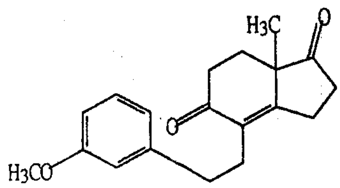
10) 

V. Rank the compounds in the following set in order of their expected reactivity toward nucleophilic acyl substitution: 3 %
Ethyl ethanoate, ethanoyl chloride, ethanamide

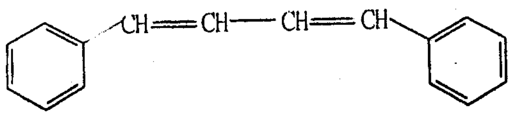
VI. As a rule, carbanions are poor leaving groups in nucleophilic substitution reactions. Why do you suppost the second step of the haloform reaction takes place so readily? 3 %

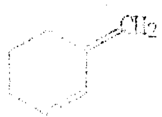
VII. Why is the saponification of an ester irriversible? 3 %

VIII. How would you prepare the following compound using a Robinson annulation reaction between a β-diketone and an α,β-unsaturated ketone? Draw the structures of both reactants and the intermediate Michael addition product. 4 %



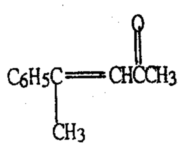
IX. Show how the Wittig reaction might be used to prepare the following alkenes. Idenfify the alkyl halide and the carbonyl components that would be used. 8 %

1) 

2) 

X. Which of the following compounds are aldol condensation products? What is the aldehyde or ketone precursor of each? 6 %

(a) 5-Ethyl-4-methyl-4-hepten-3-one

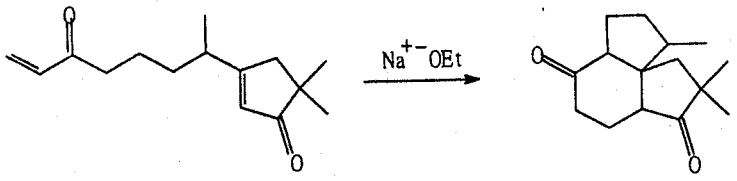
(b) 

系級	科目	授課教師	考試日期	學號	姓名
藥(六)二	有機化學	李訓	91年1月15日第 乙 節		

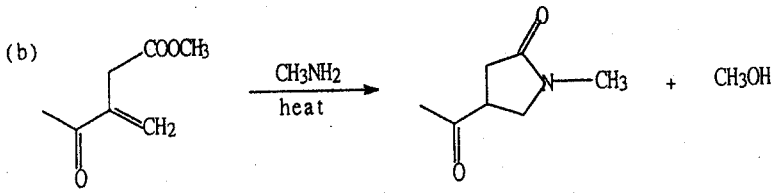
※①請注意本試題共 4 張。如發現頁數不足及空白頁或缺印，應當場請求補齊，否則缺少部份概以零分計。
②每張試題卷務必填寫(學號)、(姓名)。

XI. Propose a mechanism to account for the following reactions: 8 %

(a)



(b)



XII. Compound A, $C_8H_{17}N$, when subjected to Hofmann elimination, A yields 5-(*N*,*N*-dimethylamino)-1-octene. If A is a secondary amine, what is its structure? 3 %

XIII. How would you carry out the following reactions. 12 %

1) Benzene ⟶ *m*-bromobenzoic acid

2) Ethyl acetoacetate ⟶ Methyl cyclopentyl ketone

3)